p = 0.14) (Fig. 2). S_l also had the largest SRM (Fig. 1), suggesting that, of the parameters tested, it is the most sensitive to change.

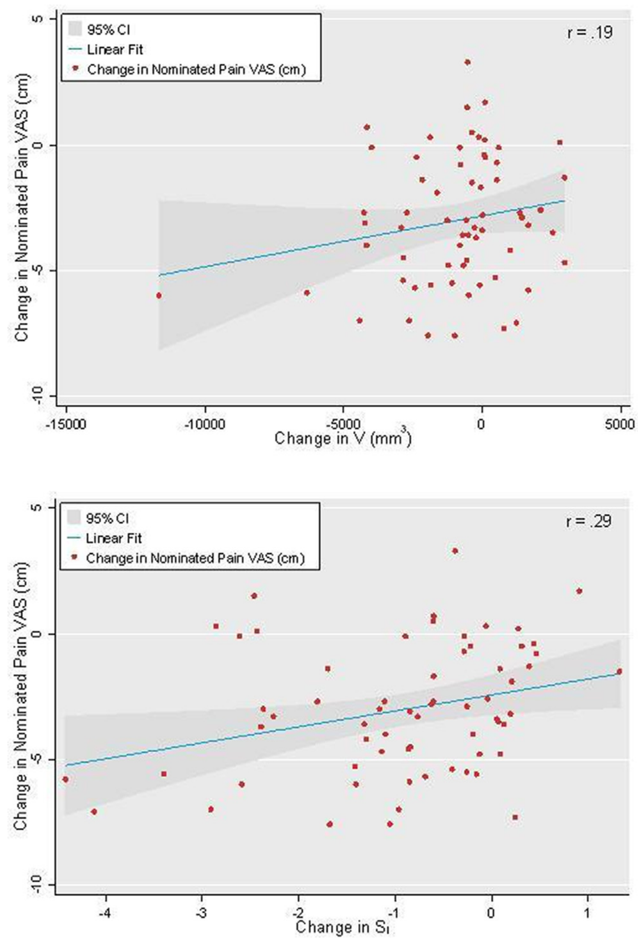

Fig. 2. Change in nominated pain VAS versus (a) change in V, (b) change in S_1.

Conclusions: Synovial volume and enhancement parameters all reduce in response to treatment. However, changes in the late relative enhancement S_l showed the strongest correlation with changes in pain following treatment. The correlation between S_l and v_e, the fractional extracellular volume, is consistent with the dependence of S_l on v_e. Measurement of synovial contrast enhancement may therefore be better than measuring volume for assessing response of synovium to treatment.

431
HOW DOES THE MRI DEFINITION OF KNEE OSTEOARTHRITIS CORRESPOND TO THE ACR CRITERIA?

D. Schiphof, E.J. Waarsing, E.H. Oei, S.M. Bierma-Zeinstra. *Erasmus MC, Rotterdam, Netherlands*

Purpose: With the use of a Delphi approach an MRI definition for knee osteoarthritis (OA) was proposed. This definition has not yet been validated in other populations and against established definitions for knee OA used in clinical or research settings. In previous work, we showed that if this MRI definition of tibiofemoral (TF) OA (TFOAMRI) is applied, more cases of knee OA are detected than with the radiographic Kellgren and Lawrence grading (K&L). Together with a better content validity and at least equal construct validity, we concluded that the TFOAMRI is more sensitive in detecting structural knee OA. How the MRI definition for knee OA corresponds with the American College of Rheumatology (ACR) criteria for knee OA is unknown. The aim of the present study was to investigate how the MRI definition corresponds with the clinical, as well as the combined clinical and radiological ACR-criteria compared with the K&L grading.

Methods: In a subpopulation of 891 females (aged 45-60) participating in the open population-based Rotterdam Study, radiographs and MRI of both knees were assessed for knee OA. Radiographs were assessed with the K&L grading as well as separate OA features (osteophytes). OA features (osteophytes (OS), cartilage lesions, bone marrow lesions, cysts, meniscus lesions) were scored on all MRIs with a comprehensive semi-quantitative scoring system. Based on these scored features we applied the proposed MRI definition. We distinguished a PFOAMRI-definition from a TFOAMRI-definition. Knee OAMRI was defined as PFOAMRI and/or TFOAMRI. In addition, knees were categorized as having only K&L $\geq$ 2, only MRI based OA (TF/PF), or both. A physical exam of both knees was performed to obtain information about crepitus, bony tenderness and palpable warmth. Participants filled in a questionnaire with knee specific questions, such as if they had pain on most days of the last month and morning stiffness for less than 30 minutes.

Results: 889 Females and 1778 knees were included. Of 26 knees data was missing due to insufficient quality of the MRI; 4 knees missed radiographs of the knee; and in 74 knees no data on palpable warmth was available. Mean age was 55.0 years; mean BMI was27.0 kg/m^2. 135 knees were defined as having PFOAMRI; 160 knees met the TFOAMRI criteria; 81 knees met the K&L $\geq$ 2 grading; 48 knees met the clinical ACR criteria; 228 knees met the clinical + radiographic ACR criteria. Table 1 shows the agreement of the definitions with the ACR-criteria. None of the definitions corresponded well with the ACR criteria. Only approximately 10% of the knees with a MRI definition for knee OA and 17% of the K&L$\geq$2 fulfilled the clinical ACR criteria. The combined ACR-criteria were fulfilled in 10–15% of the knees with MRI based knee OA and in 30% of the K&L$\geq$2 knees. In the knees meeting both definitions, the highest agreement was seen (24% for clinical ACR-criteria and 39% for combined ACR-criteria).

Conclusions: All definitions (TF-, PFOAMRI and K&L$\geq$2) did not correspond well to the clinical as well as clinical and radiological ACR-criteria. In an open population of middle aged women a knee with both K&L$\geq$2 and a MRI definition for knee OA showed the highest agreement with the ACR-criteria. This is in agreement with previous research, which suggests that the ACR-criteria seem to reflect later signs in advanced disease.

Table 1
Correspondance of the imaging based knee OA definitions with the ACR criteria

	Clinical ACR criteria (n = 48)		Combined clinical and radiological ACR criteria (n = 34)	
	Yes	No	Yes	No
PF OAMRI (n = 135)				
Yes	13	112	13	122
No	34	1531	20	1608
TFOAMRI (n = 161)				
Yes	14	123	24	137
No	34	1530	10	1603
Knee OAMRI (n = 241)				
Yes	20	195	27	214
No	28	1448	7	1516
K&L≥2 (n = 81)				
Yes	12	57	24	57
No	36	1600	10	1687
Combined No OA (n = 1489)	25	1419	2	1487
K&L≥2 (n = 31)	3	26	5	26
Knee OAMRI (n = 194)	11	167	8	186
K&L≥2 & knee OAMRI (n = 46)	9	28	18	28

432
MENISCUS TREATMENT AND AGE PREDICT MEDIAL COMPARTMENT JOINT SPACE DIFFERENCE AT A MINIMUM OF TWO YEARS AFTER ACL RECONSTRUCTION: DATA FROM THE MOON ONSITE COHORT

M.H. Jones †, E.K. Reinke ‡, J. Duryea §, B.C. Fleming ||, E. Scaramuzza ‡, N. Obuchowski †, MOON Group, K.P. Spindler ‡. † *Cleveland Clinic Sports Hlth.Ctr., Cleveland, OH, USA;* ‡ *Vanderbilt Univ. Med. Ctr., Nashville, TN, USA;* § *Brigham and Women's Hosp., Boston, MA, USA;* || *Brown Univ., Providence, RI, USA*

Purpose: ACL reconstruction can effectively restore knee stability and allow a return to athletic activities after ACL injury, but patients are still